

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.

Application Serial Number: 10/594, 014
Source: TFWP
Date Processed by STIC: 10/3/06

ENTERED



IFWP

RAW SEQUENCE LISTING

DATE: 10/03/2006

PATENT APPLICATION: US/10/594,014

TIME: 09:09:35

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\10032006\J594014.raw

```

3 <110> APPLICANT: DSM IP Assets B.V.
4     Petrus J.T. Dekker
5     Marco A. van den Berg
7 <120> TITLE OF INVENTION: FILAMENTOUS FUNGAL MUTANTS WITH IMPROVED HOMOLOGOUS
RECOMBINATION
8     EFFICIENCY
10 <130> FILE REFERENCE: 3663-335 / 24181USWO
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/594,014
13 <141> CURRENT FILING DATE: 2006-09-25
15 <150> PRIOR APPLICATION NUMBER: PCT/EP2005/051464
16 <151> PRIOR FILING DATE: 2005-03-31
18 <150> PRIOR APPLICATION NUMBER: EP 04076057.1
19 <151> PRIOR FILING DATE: 2004-04-02
21 <160> NUMBER OF SEQ ID NOS: 23
23 <170> SOFTWARE: MS Word
25 <210> SEQ ID NO: 1
26 <211> LENGTH: 2284
27 <212> TYPE: DNA
28 <213> ORGANISM: Aspergillus niger
30 <400> SEQUENCE: 1
31 atggcgagacg gcaacccaca tcgggaagat gaggcggccg aggaagaaga ggagattgat      60
32 gagactgtac gcaaatttac ccatgaactt ggactggaac tctggaactg acaataagat      120
33 cagagctaca aaccagtcaa agatgcggtc ctcttcgcaa tcgatgtcag cgattccatg      180
34 ttgacgcctc gcccctcagc agatcctaag aaacacaccc aagaatcacc caccacggca      240
35 gcgctcaaat gcgcctatca ctctcatgcaa caacgaatca tatcaaattc acaagacatg      300
36 atgggtgttt tgctgttcgg gacccaggcg tccaagttct ttgaagaaga tgaagacagt      360
37 cggggagacc tgtcctaccc caactgctac ctcttcactg atctggatgt tccttcggct      420
38 catgaggtca aaggacttcg agcactggta gatgatgaag gagactcaag ggagggtcta      480
39 tctccagcga aagagcaggc ctctatggca aacgtcctat tttgcgccaa ccagatattc      540
40 acatccagag cgccaaattt cctctcccgg cgtttgttca tcataaccga caatgacaac      600
41 ccccatgggtg atgataaaac cctgcgggtca ggcggcactg tacgtgctaa ggatctttac      660
42 gatcttgggtg tcacaattga gctgtttccg atctcacgcc ctgagcatga gttcaagaac      720
43 agcaagttct atgacgtaag ctatcatact ctatagcaaa gtggcagggg tcgataactca      780
44 ctacagatac aaaggatatt atctacaagt cattgcccag cgatccagag gcgcctgcat      840
45 atctacaatc tgattcaaaa gcggcgactg cgaccgggga cgggatttca ctctcaaca      900
46 cgcttctgtc cagtattaat tcgagaacgg ttccgcgtcg cactcatttt tcgaacatgc      960
47 ctttagaact tggcccagac ttcagaattt cgggtatcggg ctatatactc ttacgaaggc      1020
48 aagcgcgccg tagaaactcc ttcactctggc tgaacggcga gaagcctgtg gtcgcgaaag      1080
49 gagtgacttc ccactccgca gatgatactg gccggactgt cgagaaatgg gagatcagaa      1140
50 aggcataataa gttcgggtggc gaccaagtaa ccttttcgcc tgatgagcag aaggcgctta      1200
51 gggatttcgg tgagccagta atccgggtta ttgggttcaa gcctatcact gcgcttccat      1260
52 tctgggcaaa cgtcaagcac ccatatttta tctatccatc cgaggaagac tatgtaggct      1320
53 cctcgcgagt attttccgca ttgcatcaga ctcttttgcg ttccaagaag atggcactcg      1380
54 tctggttcat tgcacgcaag ggtgctggcc ccgttctcgc cgctatgatc gcaggcgaag      1440

```

RAW SEQUENCE LISTING

DATE: 10/03/2006

PATENT APPLICATION: US/10/594,014

TIME: 09:09:35

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\10032006\J594014.raw

```

55 aaaagcttga tgagaatggc gtacaaaaat accctcctgg catgtggatt cttcccctcc 1500
56 ccttcgcaga cgatatccgg cagaaccccg aaacaacggt gaatgtcgcc ccggagtcac 1560
57 tgattgatca gatgcgcgtg atcgtccagc aactgcagct gccgaaggga gtgtacgagc 1620
58 ctctcaaata ccccaatcca tgtaagtcac ttctgtcttg cattgtctgt atacgatgaa 1680
59 cgagaagctg acagcccgtg atcagccctt caatggcatt accgcatcct acaagctctc 1740
60 gcattagacg aagatctccc cgaaaaacca gaagacaaaa ccattccgaa ataccgccaa 1800
61 atcgacaagg taaatccacc acaccaaca cgagaaataa ccctccaggc gtccaactta 1860
62 ctgacaattg caccacagcg cgccggtgac tacgtattat cctgggcccga cgaactcgaa 1920
63 aagcaatacg ccaaaacctc agcagcggcc cctcgcccaa ccagcaccct cgtgaaacga 1980
64 ggatcaaaag accgagcaag cgaaaccgag gactccaagc catcgaaaaa gatcaagggt 2040
65 gaggaagact ctggaagcct agaggaggaa gtccgcaggc atcacaagaa gggaaacgta 2100
66 tccaaggtaa gccaccacag gctttctaca cgtcctcgtg atggcaaata tgacatcgta 2160
67 ttaaccggcg gttttctagc ttacggtcgc taccctcaag gacttcttga cttccaatgg 2220
68 acgctcaaat gccggtaaga aggcggatct tattgagcgg gtagaggagt tcttgagca 2280
69 gtga 2284
72 <210> SEQ ID NO: 2
73 <211> LENGTH: 1947
74 <212> TYPE: DNA
75 <213> ORGANISM: Aspergillus niger
77 <400> SEQUENCE: 2
78 atggcggacg gcaaccaca tcgggaagat gaggcggccg aggaagaaga ggagattgat 60
79 gagactagct acaaaccagt caaagatgcg gtccctcttcg caatcgatgt cagcgattcc 120
80 atgttgacgc ctgcgccctc agcagatcct aagaaacaca cccaagaatc acccaccacg 180
81 gcagcgtca aatgcgccta tcaattcatg caacaacgaa tcatatcaa tccacaagac 240
82 atgatgggtg ttttgctgtt cgggacccag gcgtccaagt tctttgaaga agatgaagac 300
83 agtcggggag acctgtccta cccaactgc tactcttca ctgatctgga tgttctctcg 360
84 gctcatgagg tcaaaggact tcgagcactg gtagatgatg aaggagactc aaggagggtt 420
85 ctatctccag cgaaagagca ggtctctatg gcaaacgtcc tattttgcgc caaccagata 480
86 ttcacatcca gagcgccaaa tttcctctcc cggcgtttgt tcatcataac cgacaatgac 540
87 aacccccatg gtgatgataa aacctgcgg tcagcggcga ctgtacgtgc taaggatctt 600
88 tacgatcttg gtgtcacaat tgagctgttt ccgatctcac gccctgagca tgagttcaag 660
89 aacagcaagt tctatgactc attgcccagc gatccagagg cgctgcata tctacaatct 720
90 gattcaaaag cggcgactgc gaccggggac gggatttcac tctcaacac gcttctgtcc 780
91 agtattaatt cgagaacggt tccgcgtcgc actcattttt cgaacatgcc tttagaactt 840
92 ggcccagact tcagaatttc ggtatcgggc tatatactct tacgaaggca agcggccgct 900
93 agaaactcct tcatctggct gaacggcgag aagcctgtgg tcgcgaaagg agtgacttcc 960
94 cactccgcag atgatactgg ccggactgtc gagaaatggg agatcagaaa ggcatataag 1020
95 ttcggtggcg accaagtaac cttttcgctt gatgagcaga aggcgcttag ggatttcggt 1080
96 gagccagtaa tccgggttat tgggttcaag cctatcactg cgcttccatt ctgggcaaac 1140
97 gtcaagcacc catattttat ctatccatcc gaggaagact atgtaggctc ctgcgagta 1200
98 ttttcgcgat tgcacagac tcttttgcgt tccaagaaga tggcactcgt ctgggttcatt 1260
99 gcacgcaagg gtgctggccc cgttctcgcc gctatgatcg caggcgaaga aaagcttgat 1320
100 gagaatggcg taaaaaata ccctcctggc atgtggattc tccccctccc cttcgcagac 1380
101 gatatccggc agaaccocga aacaacgttg aatgtcgccc cggagtcatt gattgatcag 1440
102 atgcgcgtga tcgtccagca actgcagctg ccgaaggagg tgtacgagcc tctcaaatac 1500
103 cccaatccat cccttcaatg gcattaccgc atcctacaag ctctcgcat agacgaagat 1560
104 ctccccgaaa aaccagaaga caaaaccatt ccgaaatacc gccaaatcga caagcgcgcc 1620
105 ggtgactacg tattatcctg ggccgacgaa ctcgaaaagc aatacgccaa aacctcagca 1680
106 gcggccctc gcccaaccag caccctcgtg aaacgaggat caaaagaccg agcaagcgaa 1740

```

RAW SEQUENCE LISTING

DATE: 10/03/2006

PATENT APPLICATION: US/10/594,014

TIME: 09:09:35

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\10032006\J594014.raw

```

107 accgaggact ccaagccatc gaaaaagatc aaggttgagg aagactctgg aagcctagag 1800
108 gaggaagtcc gcaggcatca caagaaggga acgctatcca agcttacggt cgctatcctc 1860
109 aaggacttct tgacttccaa tggacgctca aatgccggta agaaggcgga tcttattgag 1920
110 cgggtagagg agttcttgga gcagtga 1947
113 <210> SEQ ID NO: 3
114 <211> LENGTH: 648
115 <212> TYPE: PRT
116 <213> ORGANISM: Aspergillus niger
118 <400> SEQUENCE: 3
119 Met Ala Asp Gly Asn Pro His Arg Glu Asp Glu Ala Ala Glu Glu Glu
120 1 5 10 15
122 Glu Glu Ile Asp Glu Thr Ser Tyr Lys Pro Val Lys Asp Ala Val Leu
123 20 25 30
125 Phe Ala Ile Asp Val Ser Asp Ser Met Leu Thr Pro Arg Pro Ser Ala
126 35 40 45
128 Asp Pro Lys Lys His Thr Gln Glu Ser Pro Thr Thr Ala Ala Leu Lys
129 50 55 60
131 Cys Ala Tyr His Phe Met Gln Gln Arg Ile Ile Ser Asn Pro Gln Asp
132 65 70 75 80
134 Met Met Gly Val Leu Leu Phe Gly Thr Gln Ala Ser Lys Phe Phe Glu
135 85 90 95
137 Glu Asp Glu Asp Ser Arg Gly Asp Leu Ser Tyr Pro Asn Cys Tyr Leu
138 100 105 110
140 Phe Thr Asp Leu Asp Val Pro Ser Ala His Glu Val Lys Gly Leu Arg
141 115 120 125
143 Ala Leu Val Asp Asp Glu Gly Asp Ser Arg Glu Val Leu Ser Pro Ala
144 130 135 140
146 Lys Glu Gln Val Ser Met Ala Asn Val Leu Phe Cys Ala Asn Gln Ile
147 145 150 155 160
149 Phe Thr Ser Arg Ala Pro Asn Phe Leu Ser Arg Arg Leu Phe Ile Ile
150 165 170 175
152 Thr Asp Asn Asp Asn Pro His Gly Asp Asp Lys Thr Leu Arg Ser Ala
153 180 185 190
155 Ala Thr Val Arg Ala Lys Asp Leu Tyr Asp Leu Gly Val Thr Ile Glu
156 195 200 205
158 Leu Phe Pro Ile Ser Arg Pro Glu His Glu Phe Lys Asn Ser Lys Phe
159 210 215 220
161 Tyr Asp Ser Leu Pro Ser Asp Pro Glu Ala Pro Ala Tyr Leu Gln Ser
162 225 230 235 240
164 Asp Ser Lys Ala Ala Thr Ala Thr Gly Asp Gly Ile Ser Leu Leu Asn
165 245 250 255
167 Thr Leu Leu Ser Ser Ile Asn Ser Arg Thr Val Pro Arg Arg Thr His
168 260 265 270
170 Phe Ser Asn Met Pro Leu Glu Leu Gly Pro Asp Phe Arg Ile Ser Val
171 275 280 285
173 Ser Gly Tyr Ile Leu Leu Arg Arg Gln Ala Pro Ala Arg Asn Ser Phe
174 290 295 300
176 Ile Trp Leu Asn Gly Glu Lys Pro Val Val Ala Lys Gly Val Thr Ser
177 305 310 315 320

```

RAW SEQUENCE LISTING

DATE: 10/03/2006

PATENT APPLICATION: US/10/594,014

TIME: 09:09:35

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\10032006\J594014.raw

```

179 His Ser Ala Asp Asp Thr Gly Arg Thr Val Glu Lys Trp Glu Ile Arg
180          325          330          335
182 Lys Ala Tyr Lys Phe Gly Gly Asp Gln Val Thr Phe Ser Pro Asp Glu
183          340          345          350
185 Gln Lys Ala Leu Arg Asp Phe Gly Glu Pro Val Ile Arg Val Ile Gly
186          355          360          365
188 Phe Lys Pro Ile Thr Ala Leu Pro Phe Trp Ala Asn Val Lys His Pro
189          370          375          380
191 Tyr Phe Ile Tyr Pro Ser Glu Glu Asp Tyr Val Gly Ser Ser Arg Val
192 385          390          395          400
194 Phe Ser Ala Leu His Gln Thr Leu Leu Arg Ser Lys Lys Met Ala Leu
195          405          410          415
197 Val Trp Phe Ile Ala Arg Lys Gly Ala Gly Pro Val Leu Ala Ala Met
198          420          425          430
200 Ile Ala Gly Glu Glu Lys Leu Asp Glu Asn Gly Val Gln Lys Tyr Pro
201          435          440          445
203 Pro Gly Met Trp Ile Leu Pro Leu Pro Phe Ala Asp Asp Ile Arg Gln
204          450          455          460
206 Asn Pro Glu Thr Thr Leu Asn Val Ala Pro Glu Ser Leu Ile Asp Gln
207 465          470          475          480
209 Met Arg Val Ile Val Gln Gln Leu Gln Leu Pro Lys Gly Val Tyr Glu
210          485          490          495
212 Pro Leu Lys Tyr Pro Asn Pro Ser Leu Gln Trp His Tyr Arg Ile Leu
213          500          505          510
215 Gln Ala Leu Ala Leu Asp Glu Asp Leu Pro Glu Lys Pro Glu Asp Lys
216          515          520          525
218 Thr Ile Pro Lys Tyr Arg Gln Ile Asp Lys Arg Ala Gly Asp Tyr Val
219          530          535          540
221 Leu Ser Trp Ala Asp Glu Leu Glu Lys Gln Tyr Ala Lys Thr Ser Ala
222 545          550          555          560
224 Ala Ala Pro Arg Pro Thr Ser Thr Leu Val Lys Arg Gly Ser Lys Asp
225          565          570          575
227 Arg Ala Ser Glu Thr Glu Asp Ser Lys Pro Ser Lys Lys Ile Lys Val
228          580          585          590
230 Glu Glu Asp Ser Gly Ser Leu Glu Glu Val Arg Arg His His Lys
231          595          600          605
233 Lys Gly Thr Leu Ser Lys Leu Thr Val Ala Ile Leu Lys Asp Phe Leu
234          610          615          620
236 Thr Ser Asn Gly Arg Ser Asn Ala Gly Lys Lys Ala Asp Leu Ile Glu
237 625          630          635          640
239 Arg Val Glu Glu Phe Leu Glu Gln
240          645
243 <210> SEQ ID NO: 4
244 <211> LENGTH: 2651
245 <212> TYPE: DNA
246 <213> ORGANISM: Aspergillus niger
248 <400> SEQUENCE: 4
249 atggccgata aagaggcaac tgtctacatc gtggactgcg gcaagtccat gggggagcgg      60
250 cgtcatggtc gcgaagtgac ggatctcgac tgggcgatgc aatatgtttg ggatcgtatt      120

```

RAW SEQUENCE LISTING

DATE: 10/03/2006

PATENT APPLICATION: US/10/594,014

TIME: 09:09:35

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\10032006\J594014.raw

```

251 acaggggacgg tgagatcctt attcttgaga atcatatcat acatgaaagc ttatgttttg 180
252 gataggtggc cactggacga aaaatggctt tgatcgggtg tcttgggctc aggacagatg 240
253 gtgagtgact agcctcccgg gtacagttgg tagttgtagt ttgctggtcg gggctaatagc 300
254 aggaacgtcc agaaaccgct aatgagttgg aggatgatcc tgattattcg catatctcgg 360
255 ttttgtctgg gattaaacag tatgattcat ttttgtctgc tgatcctctg gttattcgct 420
256 gatgaactat aggtttctta tgccggatat ccgggggttg agcgaccgaa taaagcctag 480
257 caagactaat aaggagatg gtgagttact cttcttgtat ggaattggag tgattggggc 540
258 tgagccgatg aatatagcta tctctgcact tgtgctcgcg attcagatga ttatcactca 600
259 gtgcaagaaa ctgaagtaca agcgcaggat tgtcctgggt actaatgggc agggcccgat 660
260 gaacccggat aatcttagtg aaataacgaa gaagattaag gaggataaca ttgaacttat 720
261 tattctgtta gtgtcaattg atacactgag agaaccgggg tactaacatg ctgcagggga 780
262 ccagactttg atgatcctga atatgggggt aaagaggaag ataaagatcc gcgaaaggta 840
263 ttttaacttcg ttccatatgc tctagactaa taataacaat ggctacaggc cgaaaatgaa 900
264 aactcctgc gtagtcttgc cgaagactgc gaaggagcct atggaaccct agaacaagct 960
265 gttgcccggc tggaaactcc tcgtgtgaaa accacaagga taacagcaag cttcaagggc 1020
266 catttgcaac taggaaaccc cgcagaatat gatactgcag ttcggatccc tgtggagcgc 1080
267 tactacagga catagcttgc aaaagctccg tcggctagtc agttcacagt acgtaacgaa 1140
268 gaggagatgg gaatggccgc ggccgcagcc ggctcgcagg aaggtagttc ccttgtgggt 1200
269 gttcgaaaca acaggtccta ccaaattgac gatgggacta ctgaagaagg ggtgagggac 1260
270 gtggatcgag agcaacttgc caagggttat gagtacgggc ggacattggg ccctattagc 1320
271 gagacggatg agaatatcac caccctagag acatttgcgg ctatcgagct tcttgggttt 1380
272 atacagagcg atcgggtgag ttctaccctc caataactgt tattatgctg ctaagtgggt 1440
273 tttgccatta gtatgatcga tacatgcaca tgcgcagcac aaacatcatc atcgcgcagc 1500
274 gcgcgaatga caaggcagca ctgcctcttt cctctttcat acatgcgctg ttcgagctgg 1560
275 aatcgtagcg tgcgcccgt atggtgctaa aggagaacaa accccctgtc atagtcgtgc 1620
276 ttgcgccatc aatcgaaacc gactacgagt gtctcctcga agcgcagttg ccattcgcag 1680
277 aagacgtacg aacgtaccgc ttccctccac tcgacagagt cattacagtg tctggtaaag 1740
278 tgggtgacaca gcatcgaaac ctacccaacg acgatctgtt gaatgcatg gacaaatacg 1800
279 tgaaaagcat ggagcttacc gatatggacg agaacgggtg agaagaattg gaagtgatct 1860
280 caacttcaact gctgactttg taaaagtga cccgacggaa tctctcccaa tagacgactc 1920
281 tttctctcca gtctgcacc ggatcgactc cgcaatccgt caccgtgcca ttcacccaa 1980
282 cgaccctatc ccgccccag cctcagtcct aacgaagttc tcccaccctc cggatgaact 2040
283 cgtcgagaag tccaagaaat acctagacaa gctagtagca gtgtcggacg tcaagaaagg 2100
284 tcagtcctac tcggccttga gcctcttagg ccccatcat actcacagt atgaatctag 2160
285 tcccaccaa aaccaaaggc accaaacgga ccgcgaaac cgagaagcca ctatccggtc 2220
286 tcgacgtcga tgcccttctc caccaagaga agcgcacgaa gatctcacc aacaacgcaa 2280
287 ttcocgagtt taagcagacg ctctcgcagg cagagaacat cgagatcatc aaggatgcag 2340
288 tgaagcagat gagcactatc attgaagacc aaatcaggca tagtcttggc gatgttaatt 2400
289 atcatcgggt cactgagggg ctaggtgtga tgcgggagga actgatcgat tatgaggaac 2460
290 ctgctctgta taacgatttc ttgaagcagc tgaaggagaa gttgttgaaa gaggagctcg 2520
291 gtggggatcg acgggagctg tgggtgctgc taagaaggag taagttgggg ttgattgaac 2580
292 agagggagtc ggaacactct gaggtgagag aagaggaagc gaaggcgttt atgtctatgg 2640
293 ctgctaagtg a
2651
296 <210> SEQ ID NO: 5
297 <211> LENGTH: 2178
298 <212> TYPE: DNA
299 <213> ORGANISM: Aspergillus niger
301 <400> SEQUENCE: 5
302 atggccgata aagaggcaac tgtctacatc gtggactgcg gcaagtccat gggggagcgg 60

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/594,014

DATE: 10/03/2006

TIME: 09:09:36

Input Set : A:\PTO.RJ.txt

Output Set: N:\CRF4\10032006\J594014.raw

L:12 M:270 C: Current Application Number differs, Wrong Format